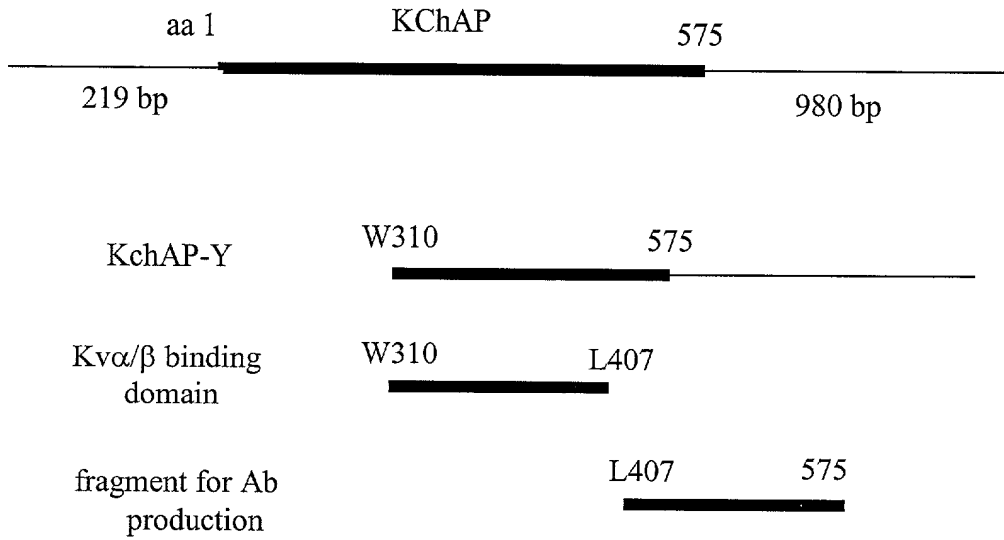


Title: **PROTEIN THAT ENHANCES EXPRESSION OF POTASSIUM CHANNELS ON  
CELL SURFACES AND NUCLEIC ACIDS THAT ENCODE THE SAME**

Inventors Name: Brown, et al.

Attorney Docket Number: 222884/04066

Fig. 1



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Fig. 2A

atgaagatcaaagaactttaccgcaggcgctttccccggaagaccctggggccttccgat  
1 -----+-----+-----+-----+-----+-----+ 60  
M K I K E L Y R R R F P R K T L G R S D -  
  
ctctcttttgctctcttttggcccttggaacctctcctgtaggetccccagcccccttgct  
61 -----+-----+-----+-----+-----+-----+ 120  
L S L L S L P P G T S P V G S P S P L A -  
  
A  
p  
a  
I  
tccattcctcccaccctcctgacccttggaaccttgctggggccctaagcgtgaggtggac  
121 -----+-----+-----+-----+-----+-----+ 180  
S I P P T L L T P G T L L G P K R E V D -  
  
A  
a  
t  
I  
I  
atgcaccctcctctgccccagcctgtgcaccctgacgtcaccatgaaaccactgcccttc  
181 -----+-----+-----+-----+-----+-----+ 240  
M H P P L P Q P V H P D V T M K P L P F -  
  
E  
a  
g  
I  
tacgaagtctacggagagctcatccggccgaccacccttgcggtccacctccagtcagagg  
241 -----+-----+-----+-----+-----+-----+ 300  
Y E V Y G E L I R P T T L A S T S S Q R -  
  
P  
v p  
u s  
I t  
I I  
tttgaggaagcccactttacctttgcactcactccccagcagctgcagcagattctcaca  
301 -----+-----+-----+-----+-----+-----+ 360  
F E E H H F T F A L T P Q Q L Q Q I L T -

20050401

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Fig. 2B

361 tccagggagggttctgccaggagccaagtgcgattataccatacaagtgcagctcagggttc 420  
-----+-----+-----+-----+-----+-----+  
S R E V L P G A K C D Y T I Q V Q L R F -  
  
P  
v  
u  
I  
I  
  
421 tgtctctgtgagaccagctgccccaggaggactatttccccctaacctctttgtcaag 480  
-----+-----+-----+-----+-----+-----+  
C L C E T S C P Q E D Y F P P N L F V K -  
  
B  
s  
t  
E  
I  
I  
  
481 gttaatgggaaactctgccccctgccgggttacctccctccaaccaagaatggagctgag 540  
-----+-----+-----+-----+-----+-----+  
V N G K L C P L P G Y L P P T K N G A E -  
  
S  
t  
u  
I  
  
541 cccaagaggcctagtcgtccaatcaacatcacacccctggctcgtctctcagccactgtt 600  
-----+-----+-----+-----+-----+-----+  
P K R P S R P I N I T P L A R L S A T V -  
  
H  
p  
a  
I  
  
601 cccaacaccatagtggttaactggatcatctgagtttggacggaattactccttgtctgtg 660  
-----+-----+-----+-----+-----+-----+  
P N T I V V N W S S E F G R N Y S L S V -

20050420

Inventors Name: Brown, et al.  
Attorney Docket Number: 222884/04066

[illegible]

p s B  
 s a  
 t W  
 I I

661 tacctgggtgaggcagttgactgcagggaccctgctacaaaagctcagagccaagggtatc 720  
 -----+-----+-----+-----+-----+-----+ 720  
 Y L V R Q L T A G T L L Q K L R A K G I -

A  
 v  
 a  
 I

721 cggaatccagaccattcccgcagcactgatcaaggagaaattgactgctgacccccgacagt 780  
 -----+-----+-----+-----+-----+-----+ 780  
 R N P D H S R A L I K E K L T A D P D S -

781 gaagtggctactacaagtctccgggtgtcactcatgtgcccgctggggaagatgcgctg 840  
 -----+-----+-----+-----+-----+-----+ 840  
 E V A T T S L R V S L M C P L G K M R L -

P  
 s  
 t  
 I

841 actgtcccatgccgcgctctcacctgtgccacactgcagagtttcgatgctgccctttat 900  
 -----+-----+-----+-----+-----+-----+ 900  
 T V P C R A L T C A H L Q S F D A A L Y -

901 ctacagatgaatgagaaaaagccaacatggacgtgccctgtgtgtgacaagaaggctccc 960  
 -----+-----+-----+-----+-----+-----+ 960  
 L Q M N E K K P T W T C P V C D K K A P -

961 tatgagtcactgattattgatgggtttattcatggaaattcttaattcctgttcggattgt 1020  
 -----+-----+-----+-----+-----+-----+ 1020  
 Y E S L I I D G L F M E I L N S C S D C -

P B  
 f a  
 l m  
 M H  
 I I

1021 gatgagatccagttcatggaagatggatcctgggtgtccaatgaaacccaagaaggaggca 1080  
 -----+-----+-----+-----+-----+-----+ 1080  
 D E I Q F M E D G S W C P M K P K K E A -

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Fig. 2D

P  
f  
l  
M  
I

tccgagggtttgccccccaccagggtatgggctggatgggtctccagtatagcccagtcag  
1081-----+-----+-----+-----+-----+-----+ 1140  
S E V C P P P G Y G L D G L Q Y S P V Q -

gagggaaatcagtcagagaataagaagagggttgaagtcattgacttgacaatcgaaagc  
1141-----+-----+-----+-----+-----+-----+ 1200  
E G N Q S E N K K R V E V I D L T I E S -

B  
g  
l  
I  
I

tcatcagatgaggaagatctgccccccaccaagaagcactgcctgttacctcggtgcc  
1201-----+-----+-----+-----+-----+-----+ 1260  
S S D E E D L P P T K K H C P V T S A A -

B  
s  
t  
E  
I  
I

attccagcccttcctggaagcaaaggagccctgacctctgggtcaccagccgtcttcggtg  
1261-----+-----+-----+-----+-----+-----+ 1320  
I P A L P G S K G A L T S G H Q P S S V -

ctgcgaggagccctgcaatgggtacactgggcagtgatttcctgtctagtctccactacat  
1321-----+-----+-----+-----+-----+-----+ 1380  
L R S P A M G T L G S D F L S S L P L H -

gagtaccacactgccttcccgtggtgggctgacatccaaggttttagatttattttctttc  
1381-----+-----+-----+-----+-----+-----+ 1440  
E Y P P A F P L G A D I Q G L D L F S F -

cttcagactgagagtcagcactacagcccttcagttatcacttcactagatgagcaggac  
1441-----+-----+-----+-----+-----+-----+ 1500  
L Q T E S Q H Y S P S V I T S L D E Q D -

20250405100754

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Fig. 2E

P  
f            A  
l            p  
M           a  
I            I

```

acccttgggccacttcttccaattccggggaacccctccccacttccctgggcccactggcc
1501-----+-----+-----+-----+-----+-----+-----+ 1560
T L G H F F Q F R G T P P H F L G P L A -

cccacattggggagctctcaccgcagcgccactccagcaccccgctcctggccgtgtcagc
1561-----+-----+-----+-----+-----+-----+-----+ 1620
P T L G S S J R S A T P A P A P G R V S -

                                     B
                                     s
                                     a
                                     W
                                     I

agcattgtggctcctgggagttccttgaggggaagggcatggaggacccctgccttccggt
1621-----+-----+-----+-----+-----+-----+-----+ 1680
S I V A P G S S L R E G H G G P L P S G -

                                     A
                                     a
                                     t
                                     I
                                     I

ccctctttgactggctgtcggtcagacgtcatttccttggactga
1681-----+-----+-----+-----+-----+-----+ 1725
P S L T G C R S D V I S L D * -

```

Enzymes that do cut:

AatII	ApaI	AvaI	BamHI	BglII	BsaWI	BstEII	EagI
HpaI	PflMI	PstI	PvuII	StuI			

Enzymes that do not cut:

AgeI	AseI	BbrPI	BfrI	BsaBI	BsmI	BssHII	BstbI
BstXI	ClaI	DraI	DraIII	EcoRI	HindIII	KpnI	MluI
NarI	NcoI	NdeI	NheI	NotI	NruI	NsiI	PmlI
PvuI	SacII	SalI	SauI	ScaI	SfiI	SmaI	SnaBI
SpeI	SspI	XbaI	XhoI				

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Fig. 3A

A  
p  
a  
I

1 atgaagatcaaagagctttaccgacgacgctttccccggaagaccctggggccctctgat 60  
-----+-----+-----+-----+-----+-----+-----+  
M K I K E L Y R R R F P R K T L G P S D -

61 ctctcccttctctctttgccccctggcacctctcctgtaggctccctgggcctctagct 120  
-----+-----+-----+-----+-----+-----+-----+  
L S L L S L P P G T S P V G S P G P L A -

A  
p  
a  
I

121 cccattcccccaacgctgttgccccctggcacccctgctgggcccccaagcgtgaggtggac 180  
-----+-----+-----+-----+-----+-----+-----+  
P I P P T L L A P G T L L G P K R E V D -

181 atgcacccccctctgccccagcctgtgcaccctgatgtcaccatgaaaccattgcccttc 240  
-----+-----+-----+-----+-----+-----+-----+  
M H P P L P Q P V H P D V T M K P L P F -

241 tatgaagtctatggggagctcatccggcccaccacccttgcacccacttctagccagcgg 300  
-----+-----+-----+-----+-----+-----+-----+  
Y E V Y G E L I R P T T L A S T S S Q R -

301 tttgaggaagcgcactttacctttgccctcacaccccagcaagtgcagcagattctttaca 360  
-----+-----+-----+-----+-----+-----+-----+  
F E E A H F T F A L T P Q Q V Q Q I L T -

361 tccagagaggttctgccaggagccaaatgtgattataccatacaggtgcagctaagggttc 420  
-----+-----+-----+-----+-----+-----+-----+  
S R E V L P G A K C D Y T I Q V Q L R F -

P  
v  
u  
I  
I

421 tgtctctgtgagaccagctgccccaggaagattattttcccccaacctctttgtcaag 480  
-----+-----+-----+-----+-----+-----+-----+  
C L C E T S C P Q E D Y F P P N L F V K -

200504066

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Fig. 3B

B  
S  
t  
E  
I  
I

gttaatgggaaactgtgccccctgccgggttaccttccccaaccaagaatggggccgag  
481 -----+-----+-----+-----+-----+-----+ 540  
V N G K L C P L P G Y L P P T K N G A E -  
cccaagaggcccagccgccccatcaacatcacaccctggctcgactctcagccactgtt  
541 -----+-----+-----+-----+-----+-----+ 600  
P K R P S R P I N I T P L A R L S A T V -  
cccaacaccattgtgggtcaattgggtcatctgagttcggacggaattactccttgtctgtg  
601 -----+-----+-----+-----+-----+-----+ 660  
P N T I V V N W S S E F G R N Y S L S V -  
tacctgggtgaggcagttgactgcaggaacccttctacaaaaactcagagcaaagggatatc  
661 -----+-----+-----+-----+-----+-----+ 720  
Y L V R Q L T A G T L L Q K L R A K G I -  
cggaaccagaccactcgcgggcactgatcaaggagaaattgactgctgaccctgacagt  
721 -----+-----+-----+-----+-----+-----+ 780  
R N P D H S R A L I K E K L T A D P D S -  
gaggtggccactacaagtctccgggtgtcactcatgtgcccgctaggggaagatgcgctg  
781 -----+-----+-----+-----+-----+-----+ 840  
E V A T T S L R V S L M C P L G K M R L -  
actgtcccttgctcgtgccctcacctgtgccacctgcagagcttcgatgctgccctttat  
841 -----+-----+-----+-----+-----+-----+ 900  
T V P C R A L T C A H L Q S F D A A L Y -  
ctacagatgaatgagaagaagcctacatggacatgtcctgtgtgtgacaagaaggctccc  
901 -----+-----+-----+-----+-----+-----+ 960  
L Q M N E K K P T W T C P V C D K K A P -

P  
S  
t  
I

B  
S  
a  
W  
I

P  
S  
t  
I



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Fig. 3C

tatgaatctcttatcattgatgggtttatattatggagattcttagttcctgttcagattgt  
961-----+-----+-----+-----+-----+-----+ 1020  
Y E S L I I D G L F M E I L S S C S D C -  
  
P B  
f a  
l m  
M H  
I I  
  
gatgagatccaattcatggaagatggatcctgggtgcccaatgaaacccaagaaggaggca  
1021-----+-----+-----+-----+-----+-----+ 1080  
D E I Q F M E D G S W C P M K P K K E A -  
  
P  
f  
l  
M  
I  
  
tctgagggttgcccccgccagggtatgggctggatggcctccagtacagcccagtcag  
1081-----+-----+-----+-----+-----+-----+ 1140  
S E V C P P P G Y G L D G L Q Y S P V Q -  
  
gggggagatccatcagagaataagaagaagggtcgaagttattgacttgacaatagaaagc  
1141-----+-----+-----+-----+-----+-----+ 1200  
G G D P S E N K K K V E V I D L T I E S -  
  
P  
v  
u  
I  
I  
  
tcatcagatgaggaggatctgccccctaccaagaagcactgttctgtcacctcagctgcc  
1201-----+-----+-----+-----+-----+-----+ 1260  
S S D E E D L P P T K K H C S V T S A A -  
  
atcccgccctacctggaagcaaaggagtcctgacatctggccaccagccatcctcggtg  
1261-----+-----+-----+-----+-----+-----+ 1320  
I P A L P G S K G V L T S G H Q P S S V -  
  
ctaaggagccctgctatgggcacgttgggtggggatttctgtccagttctccactacat  
1321-----+-----+-----+-----+-----+-----+ 1380  
L R S P A M G T L G G D F L S S L P L H -  
  
gagtaccacctgccttcccactgggagccgacatccaagggttagattttattttcattt  
1381-----+-----+-----+-----+-----+-----+ 1400  
E Y P P A F P L G A D I Q G L D L F S F -

4005664-04066

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Fig. 3D

cttcagacagagagtcagcactatggccctctgtcatcacctcactagatgaacaggat  
1441-----+-----+-----+-----+-----+-----+-----+ 1500  
L Q T E S Q H Y G P S V I T S L D E Q D -

gccttggccacttcttcagtagccgagggaccccttctcactttctgggccactggcc  
1501-----+-----+-----+-----+-----+-----+-----+ 1560  
A L G H F F Q Y R G T P S H F L G P L A -

cccacgctggggagctcccactgcagcgccactccggcgccccctcctggccgtgtcagc  
1561-----+-----+-----+-----+-----+-----+-----+ 1620  
P T L G S S H C S A T P A P P P G R V S -

agcattgtggccctgggggggccttgagggaggggcatggaggaccctgcctcaggt  
1621-----+-----+-----+-----+-----+-----+-----+ 1680  
S I V A P G G A L R E G H G G P L P S G -

ccctctttgactggctgtcggtcagacatcatttcctggactga  
1681-----+-----+-----+-----+-----+-----+ 1725  
P S L T G C R S D I I S L D \* -

Enzymes that do cut:

Apal	BamHI	BsaWI	BstEII	NarI	PflMI	PstI	PvuII
SauI							

Enzymes that do not cut:

AatII	AgeI	AseI	AvaI	BbrPI	BfrI	BglII	BsaBI
BsmI	BssHII	BstBI	BstXI	ClaI	DraI	DraIII	EagI
EcoRI	HindIII	HpaI	KpnI	MluI	NcoI	NdeI	NheI
NotI	NruI	NsiI	PmlI	PvuI	SacII	SalI	ScaI
SfiI	SmaI	SnaBI	SpeI	SspI	StuI	XbaI	XhoI

200504052001

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1	MKIKELYRRRFPRKTLGPSDSLSSLLSLPPGTSPVGSPPGLAPIPPTLLAPG	50
	:     .	
1	MKIKELYRRRFPRKTLGPSDSLSSLLSLPPGTSPVGSPPGLASIPPTLLTPG	50
51	TLLGPKREVDMHPPLPQPVHPDVTMKPLPFYEVYGELIRPTTLLASTSSQR	100
51	TLLGPKREVDMHPPLPQPVHPDVTMKPLPFYEVYGELIRPTTLLASTSSQR	100
101	FEEAHFTFALTPQQVQQIILTSREVLPGAKCDYTIQVQLRFCLCETSCPQE	150
	:	
101	FEEAHFTFALTPQQVQQIILTSREVLPGAKCDYTIQVQLRFCLCETSCPQE	150
151	DYFPPNLFVKVNGKLCPLPGYLPPTKNGAEPKRPSRPINITPLARLSATV	200
151	DYFPPNLFVKVNGKLCPLPGYLPPTKNGAEPKRPSRPINITPLARLSATV	200
201	PNTIVVNWSSEFGRNYSLSVYLVRQLTAGTLLQKLRAKGIRNPDHSRALI	250
201	PNTIVVNWSSEFGRNYSLSVYLVRQLTAGTLLQKLRAKGIRNPDHSRALI	250
251	KEKLTADPDSEVATTSLRVSLMCPLGKMRLTVPCRALTCAHLQSFDAALY	300
251	KEKLTADPDSEVATTSLRVSLMCPLGKMRLTVPCRALTCAHLQSFDAALY	300
301	LQMNEKKPTWTCPVCDKKAPYESLIIDGLFMEILSSCSDCDEIQFMEDGS	350
	.	
301	LQMNEKKPTWTCPVCDKKAPYESLIIDGLFMEILNSCSDCDEIQFMEDGS	350
351	WCPMKPKKEASEVCPPPGYGLDGLQYSPVQGGDPSENKKKVEVIDLTIES	400
	: : :	
351	WCPMKPKKEASEVCPPPGYGLDGLQYSPVQEGNQSENKKRVEVIDLTIES	400
401	SSDEEDLPPTKKHCSVTSAAI PALPGSKGVLTSGHQPSVLRSPAMGTLG	450
	.     .	
401	SSDEEDLPPTKKHCPVTSAAI PALPGSKGALTSGHQPSVLRSPAMGTLG	450
451	GDFLSSSLPLHEYPPAFPLGADIQGLDLFSFLQTESQHYGPSVITSLDEQD	500
	:     :	
451	SDFLSSSLPLHEYPPAFPLGADIQGLDLFSFLQTESQHYSPSVITSLDEQD	500
501	ALGHFFQYRGTPSHFLGPLAPTLGSSHCSATPAPPPGRVSSIVAPGGALR50	
	.     :     .     :     :..	
501	TLGHFFQFRGTPPHFLGPLAPTLGSSHRSATPAPAPGRVSSIVAPGSSLR	550
551	EGHGGPLPSGPSITGCRSDIISLD*	575
	:	
551	EGHGGPLPSGPSITGCRSDVISLD*	575